

REMARKS

In the Office Action, claims 1-31, 41 and 42 were rejected. However, claims 2 and 31 were indicated to include allowable subject matter. Applicants thank the Examiner for the indication of allowable subject matter in these claims. By the present Response, claims 1, 16, 41, and 42 are amended. These amendments do not add any new matter and support for the amendments may be found at least by viewing FIG. 4, with specific attention to reference numerals 16 and 60, as well as paragraphs 14, 22, and 26 of the originally filed specification. Upon entry of the amendments, claims 1-31, 41 and 42 will remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Objection to the Specification

The title of the application as recited on both the title page and in the specification has been amended to reflect the currently elected claimed subject matter. Withdrawal of the objection to the title of the application is respectfully requested.

Objection to the Drawings

The drawings were objected to for lack of labeling of the boxes in FIGS. 1-3. Applicants have filed a replacement page with this response. Applicants respectfully submit that the present replacement page obviates the objection to the drawings. Accordingly, withdrawal of the objection to the drawings is respectfully requested.

Rejections Under 35 U.S.C. § 112

In the Office Action, the Examiner rejected claims 1 and 16 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically,

the Examiner took issue with the use of the term “transparent shield” in claims 1 and 16. Applicants respectfully traverse this rejection.

The Examiner's focus during examination of claims for compliance with the requirement for definiteness under 35 U.S.C. § 112, second paragraph, is whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. *See* M.P.E.P. § 2173.02. Applicants may use functional language, alternative expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought. *See* M.P.E.P. §§ 2173.01 and 2173.05; *In re Swinehart*, 160 U.S.P.Q. 226, (C.C.P.A. 1971). A claim term that is not used or defined in the specification is not indefinite if the meaning of the claim term is discernible. *See Bancorp Services, L.L.C. v. Hartford Life Ins. Co.*, 69 U.S.P.Q.2d 1996, 1999-2000 (Fed. Cir. 2004). Indeed, the Examiner is reminded that Applicants can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification. *See* M.P.E.P. § 2111.01 and M.P.E.P. § 2173.01.

Claims 1-6, 16, 17, and 28-31

Although Applicants do not necessarily agree that an essential element, namely a power source, is missing from claims 1-6, 16, 17, and 28-31, independent claims 1 and 16 have been amended to recite a radiation source configured to receive power from a power source. It is believed that this amendment obviates the lack of an essential element rejection as to claims 1-6, 16, 17, and 28-31. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 1-6, 16, 17, and 28-31 under 35 U.S.C. § 112, second paragraph.

Claims 1 and 16

The Examiner stated that the terms “transparent” and “shield” appear to be contradicting terms, thus rendering the term “transparent shield” indefinite. Applicants would like to point out that the specification clearly discloses that the shield may be made of any material transparent to the radiation emitted in the functioning of the device. *See* specification, paragraph 22. Moreover, the shield may protect the radiation source from the gaseous flow. *See* specification, paragraph 23. Thus, as the specification expressly discloses at least one discernable meaning for the term “transparent shield”, transparent to radiation while protective of the radiation source from exposure to the gaseous flow, claims 1 and 16 can not be indefinite. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 1 and 16 under 35 U.S.C. § 112, second paragraph.

Claim 16

Independent claim 16 has been amended to recite a radiation absorption zone for receiving *the* gaseous flow. It is believed that through antecedent basis, this amendment links the source of a gaseous flow to the particle reduction apparatus as recited in claim 16, thus obviating the indefiniteness rejection currently applied to claim 16. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 16 under 35 U.S.C. § 112, second paragraph.

Rejections Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1, 3, and 7 under 35 U.S.C. § 102(b) as anticipated by Andrews et al., U.S. Patent No. 1,560,589 (hereinafter “Andrews”). The Examiner also rejected claims 1, 3, 5-9, 13, 18-20, and 24 under 35 U.S.C. § 102(b) as anticipated by Henrie, U.S. Patent No. 4,170,455 (hereinafter “Henrie”). Applicants respectfully traverse these rejections.

Anticipation under Section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under Section 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). To maintain a proper rejection under Section 102, a single reference must teach each and every limitation of the rejected claim. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984). The prior art reference also must show the *identical* invention “*in as complete detail as contained in the ... claim*” to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989) (emphasis added). Accordingly, Applicants need only point to a single element not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter.

Omitted Features of Independent Claim 1

Andrews fails to anticipate all elements of independent claim 1. Independent claim 1 recites, *inter alia*, “to promote *reduction* of the particulate matter *from the gaseous flow*.” (Emphasis added). Andrews is directed to drying material without bringing the treated material into contact with a hard surface. *See* Andrews, col. 1, lines 14-33. To accomplish this goal, Andrews describes a delivery nozzle that directs air current over the material. *Id.*, col. 3, lines 54-56. Heat, regulated by the heat sources, is applied to the material, causing liquid to evaporate into the air current without allowing the evaporated particles to condense on the material. *Id.*, col. 4, lines 95-103. Since the liquid particles evaporate and are not allowed to condense, they must necessarily remain in the gaseous flow. Therefore, in the system of Andrews, the amount of particulate matter, in this case the evaporated liquid, is *increased* in the gaseous flow. Since the recitation of claim 1 requires *reduction* of the particulate matter from the gaseous flow, Andrews fails to anticipate all elements of independent claim 1, as well as all claims depending therefrom.

Likewise, Henrie fails to anticipate all elements of independent claim 1. Independent claim 1 recites, *inter alia*, “the radiation source *separated* from the flow of the particulate matter *by the transparent shield*.” (Emphasis added). Henrie is directed to an apparatus for monitoring the concentration of a component of a gas stream. *See* Henrie, abstract. The Examiner relied on heating means 26 of Henrie as anticipating the radiation source of independent claim 1. *See* Office Action, page 5. However, Henrie describes the gas stream as passing through the heating means 26. *See* Henrie, col. 6, lines 43-45 and FIG. 1. As such, even were the heating means of Henrie to anticipate the radiation source recited in claim 1, the heating source fails to be *separated* from the flow of the particulate matter *by the transparent shield*, as recited by independent claim 1. Accordingly, Henrie fails to anticipate all elements of independent claim 1, as well as all claims depending therefrom.

Therefore, for at least these reasons, neither Andrews nor Henrie anticipate all elements of independent claim 1. As such, Andrews or Henrie cannot anticipate independent claim 1 under Section 102. Accordingly, Applicants respectfully request withdrawal of the rejections and allowance of independent claim 1, as well as all claims depending thereon.

Claim Rejections under 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejected claims 1, 3-30, 41, and 42 under 35 U.S.C. § 103(a) as unpatentable over Henrie in view of Wagner et al., U.S. Patent No. 5,101,095 (hereinafter “Wagner”).

Applicants respectfully traverse this rejection. The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (B.P.A.I. 1979). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re*

Royka, 180 U.S.P.Q. 580 (C.C.P.A. 1974). However, it is not enough to show that all the elements exist in the prior art since a claimed invention composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). It is important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* Specifically, there must be some articulated reasoning with a rational underpinning to support a conclusion of obviousness; a conclusory statement will not suffice. *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Indeed, the factual inquiry determining whether to combine references must be thorough and searching, and it must be based on *objective evidence of record*. *In re Lee*, 61 U.S.P.Q.2d 1430, 1436 (Fed. Cir. 2002).

Omitted Features of independent claims 1, 16, 41, and 42

Independent claims 1 and 16 recite, *inter alia*, “the radiation source *separated* from the flow of the particulate matter *by the transparent shield*.” (Emphasis added). Similarly, independent claims 41 and 42 recite, *inter alia*, “means for *separating* the means for providing radiation *from the gaseous flow* carrying the particulate matter.” As described above, the only identified radiation source described by Henrie is in direct contact with the gaseous flow. *See* Henrie, col. 6, lines 43-45 and FIG. 1. Similarly, the only potential radiation source identified by Wagner is heating device 38, which is shown to be in direct contact with the gaseous flow. *See* Wagner, FIGS. 1 and 2. Thus, the teachings of both Henrie and Wagner fail suggest either the radiation source *separated* from the flow of the particulate matter *by the transparent shield* or a means for *separating* the means for providing radiation *from the gaseous flow* carrying the particulate matter, as recited in independent claims 1, 16, 41, and 42. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 1, 3-30, 41, and 42 under 35 U.S.C. § 103(a) and further request allowance of claims 1, 3-30, 41, and 42.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: January 22, 2008

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